Lisa Dillon

From: Lisa Dillon
Sent: Tuesday, January 21, 2020 10:55 AM
To: Lisa Dillon
Subject: FW: Cape Cod Hospital - Project 2022 - Emergency Generator & Fuel Storage Tanks
Attachments: 17-005 CCH fuel tank license 11-12-19.pdf; 17-005 CCHospital oil tank sketch & details.pdf

---

From: Eliza Cox <ECox@nutter.com>
Sent: Monday, January 20, 2020 9:25:07 AM
To: Jonathon Idman <jidman@capecodcommission.org>
Cc: Elizabeth Jenkins <elizabeth.jenkins@town.barnstable.ma.us>; Bachstein, Michael <mbachstein@CapeCodHealth.org>
Subject: Cape Cod Hospital - Project 2022 - Emergency Generator & Fuel Storage Tanks

Dear Jon,

As a follow-up to the Cape Cod Commission public hearing on Cape Cod Hospital's Project 2022, I am forwarding the following information:

1. Copy of the Town of Barnstable License decision for the replacement fuel storage tanks to serve the Hospital's emergency generator and back-up supply for its boilers. As described at the hearing, these new tanks are double-walled with interstitial space leak detection and have double walled piping with leak detection. The tanks will be inspected, tested and certified to the DEP per its regulations. As noted in the decision, the tanks were also approved by the Barnstable Board of Health.
2. Copy of the plans for the tanks. As you will recall, the Staff Report makes a recommendation as to anchoring the tanks (p. 11). Please note that the plans do show anchor points, a concrete anchor pad, and tie-downs.

In addition, at a meeting on Friday with the Town of Barnstable Staff, a question was raised as to the containment for the small "day tanks" which are placed right next to the emergency generators. These tanks are epoxy coated steel and are double walled construction for leak protection and containment. In addition, they are installed within the emergency generator enclosures. The day tanks also have leak detection alarms.

Please let me know if you have any questions.
Thank you,
Eliza

Nutter
uncommon law

Eliza Cox

Nutter McClennen & Fish LLP
Direct / 508-790-5431

This Electronic Message contains information from the law firm of Nutter, McClennen & Fish, LLP, which may be privileged and confidential. The information is intended to be for the use of the addressee only. If you have received this communication in error, do not read it. Please delete it from your system without copying it, and notify the sender by reply e-mail, so that our address record can be corrected. Thank you.

The Town of Barnstable

Office of Town Manager

367 Main Street, Hyannis MA 02601
www.town.barnstable.ma.us

Barnstable All-America City 2007

Mark S. Ells, Town Manager
mark.ells@town.barnstable.ma.us

M. Andrew Clyburn, Assistant Town Manager
andy.clyburn@town.barnstable.ma.us

RECEIVED
DEC 16 2019
Down Cape Engineering, Inc.

In accordance with the provisions of Chapter 148 of the General Laws, a license is hereby granted to use the land herein described for the lawful use of the building…or other structure…which is/are to be situated thereon, and as described in the plot plan filed with the application for this license.

Location of land: 27 Park Street, Hyannis, MA 02601

Owner of land: Cape Cod Hospital Address: 27 Park Street, hyanis, MA 02601

Number of buildings or other structures to which the license applies: Two Underground Storage Tanks

Occupancy or use of such buildings: N/A

Total capacity of tanks in gallons: 15,000 gallons each
Kind of fluid to be stored in tanks: No. 2 Fuel Oil

Restrictions, if any: This license replaces any and all licenses issued to this property prior to October 8 2019. Property is Map 342/001 & 039.

Mark S. Ells, Town Manager

Date: 12.23.2019

THIS LICENSE OR A PHOTOSTATIC OR CERTIFIED COPY THEREOF MUST BE CONSPICUOUSLY POSTED IN A PROTECTED PLACE ON THE LAND FOR WHICH IT IS GRANTED.

Town of Barnstable
Application for New Flammables License
Decision

Summary:	Granted with Conditions
Applicant:	Cape Cod Hospital, 27 Park Street, Hyannis, MA
Property Address:	27 Park Street, Hyannis, MA 02601
Assessor's Map/ Parcel:	342/001 & 039
Zoning:	MS, AP groundwater overlay district
Hearing Date:	October 31, 2019

BACKGROUND

By application dated October 8, 2019, Daniel Ojala, PE, PLS, of Down Cape Engineering, Inc., a representative of Cape Cod Hospital, sought a license under the provisions of G.L. c. 148 § 13 for a flammables license located at 27 Park Street, Hyannis, MA.

The Hospital needs to upgrade the storage of its emergency generator and backup supply of fuel oil for the main boilers to meet current code standards. The units are currently serviced by undersized above ground units. These smaller tanks, AST of 5,000 gallons and AST of 3,000 gallons will be removed upon successful commissioning of the new underground tanks.

The proposed fiberglass reinforced plastic (FRP) tanks are double walled with interstitial space leak detection and have double walled piping with leak detection.

The two 15,000 gallon FRP tanks have been approved by the Board of Health on four variances to Section 326 regulation, (3) 326-3 and (1) 326-11E by decision dated July 5, 2019 The tanks will be inspected by DEP per the current regulations for Underground Storage Tanks found in 310 CMR 80. The application has also been reviewed and approved by the Conservation Commission dated October 9, 2019 and by the Fire Department, Chief Burke, relating to Codes 310 CMR 80 and 527 CMR 1.00

PROCEDURAL & HEARING SUMMARY

The duly advertised public hearing on the application was conducted by Assistant Town Manager, M. Andrew Clyburn who served as the hearing officer. The hearing was opened by Mr. Clyburn on October 31, 2019.

Dan Ojala, PE. PLS, and Eliza Cox, Attorney represented the Applicant before the hearing officer and presented the proposal for the flammables license. Also present was Michael Bachstein of the Cape Cod Hospital .The Applicant proposed the application for removing the existing aboveground tanks and replacing them with new underground tanks.

Public comment was requested; none was made.

Based upon the evidence adduced at the public hearing, I make the following findings:

FINDINGS OF FACT

1. Cape Cod Hospital is seeking a license under the provisions of G.L. c. 148 §13 for a flammables license.
2. The application has been reviewed and approved by the Health, Fire and Conservation Departments by a plan entitled, Oil Tank installation Sketch, 27 Park St, Hyannis, MA, Cape Cod Healthcare, dated June 10, 2019 by down cape engineering, inc.
3. The applicant has received four Board of Health variances, to section 326 regulation dated July 5, 2019.
4. The subject property is addressed 27 Park St. Hyannis, MA and is shown on Assessor's Map 342 as Parcel 001 & 039.
5. After an evaluation of all the evidence presented, I find the application complies with M.G.L. c.148, s.13

DECISION

Based on the findings of fact, I authorize the granting of a flammables license at 27 Park St. Hyannis,MA, with the following conditions:

a. The operation shall be an upgrade of the storage of Cape Cod Hospital's emergency generator and backup supply of fuel oil for the main boilers in the amounts of two UST 15,000 gallon FRP tanks, with the removal of the smaller AST of 5,000 gallons and AST of 3,000 gallons both containing No 2 Fuel oil.
b. The tanks shall be located as shown on the plan entitled "Oil tank installation Sketch. 27 Park St. Hyannis, MA, Cape Cod Healthcare," dated June 19, 2019 by down engineering, inc.
c. The location shall be in compliance with the Board of Health four variances to Section 326 , (3) 326-3 and (1) 326-11E granted and under the decision dated July 5, 2019.

Dated: 11/12/2019

M. Andrew Clyburn
Assistant Town Manager

FUTURE ENCLOSED WALKWAY

EX. SLAB 17.4

SWITCH GEAR

SWITCH GEAR

3,000

EXISTING OXYGEN TANKS

O2

9,000

X

X

X

X

NEW 15,000 GAL UST 2

CONCRETE ANCHOR PAD BELOW, CONCRETE TRAFFIC PAD ABOVE EACH 49'X12'X10"

SEE TANK SECTION

FILL AREA SLAB 20.0 TAPER 3:1 TO GRADE WEST AND NORTH

NEW DOUBLE WALL FIBERGLASS FUEL OIL TANK

UST2

MONITORING WELL TYPICAL OF (3) SEE NOTE 5.

MW

NEW 15,000 GAL UST 1

SEE MECHANICAL DRAWINGS ME1.0 ETC. MULTIPLE COVERS AND PIPING PER DETAILS SEE SPECIFICATIONS

CONTROL BOX AND 2 12' VENTS NOTE 10

NEW DOUBLE WALL TANKS SEE NOTES

UST1

MW

FILLS

353' TO BOG

475' TO HARBOR

E

E

CUT TREES ADD BOLLARD

trane unit

14' WIDE PAVED ACCESS TO OXYGEN

STRIPE NO PARKING

CAPE COD MEDICAL CENTER

ACCESS TO BAYVIEW STREET

Scale: 1"= 20'

0 10 20 30 40 50 FEET

OIL TANK INSTALLATION SKETCH

LOCATED AT

27 PARK STREET HYANNIS, MA

PREPARED FOR

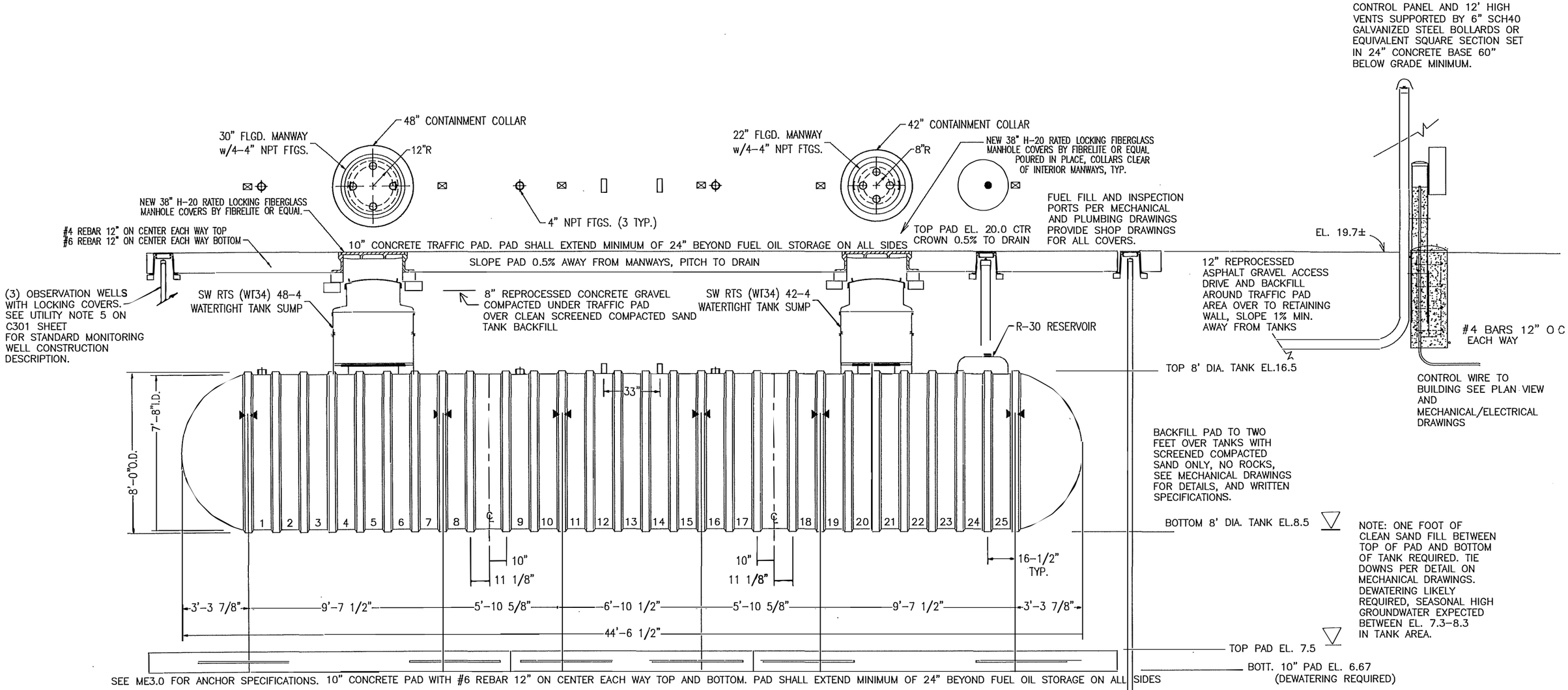
CAPE COD HEALTHCARE

DATE: JUNE 10, 2019

off 508-362-4541
fax 508-362-9880
downcape.com ©

down cape engineering, inc.
civil engineers
land surveyors
939 Main Street (Rte 6A)
YARMOUTHPORT MA 02675

DCE #17-005 02 and Gas sketch.dwg



SEE ME3.0 FOR ANCHOR SPECIFICATIONS. 10" CONCRETE PAD WITH #6 REBAR 12" ON CENTER EACH WAY TOP AND BOTTOM. PAD SHALL EXTEND MINIMUM OF 24" BEYOND FUEL OIL STORAGE ON ALL SIDES

NOTE: CONTRACTOR TO VERIFY EXACT WATER TABLE DEPTH AT TANK LOCATION PRIOR TO EXCAVATION, ADJUST DEWATERING PLAN AS REQUIRED DEPENDING ON SEASONAL DEPTH OF GROUNDWATER ENCOUNTERED.

DOUBLE WALL FIBERGLASS FUEL OIL TANKS (2) REQ.

NOT TO SCALE

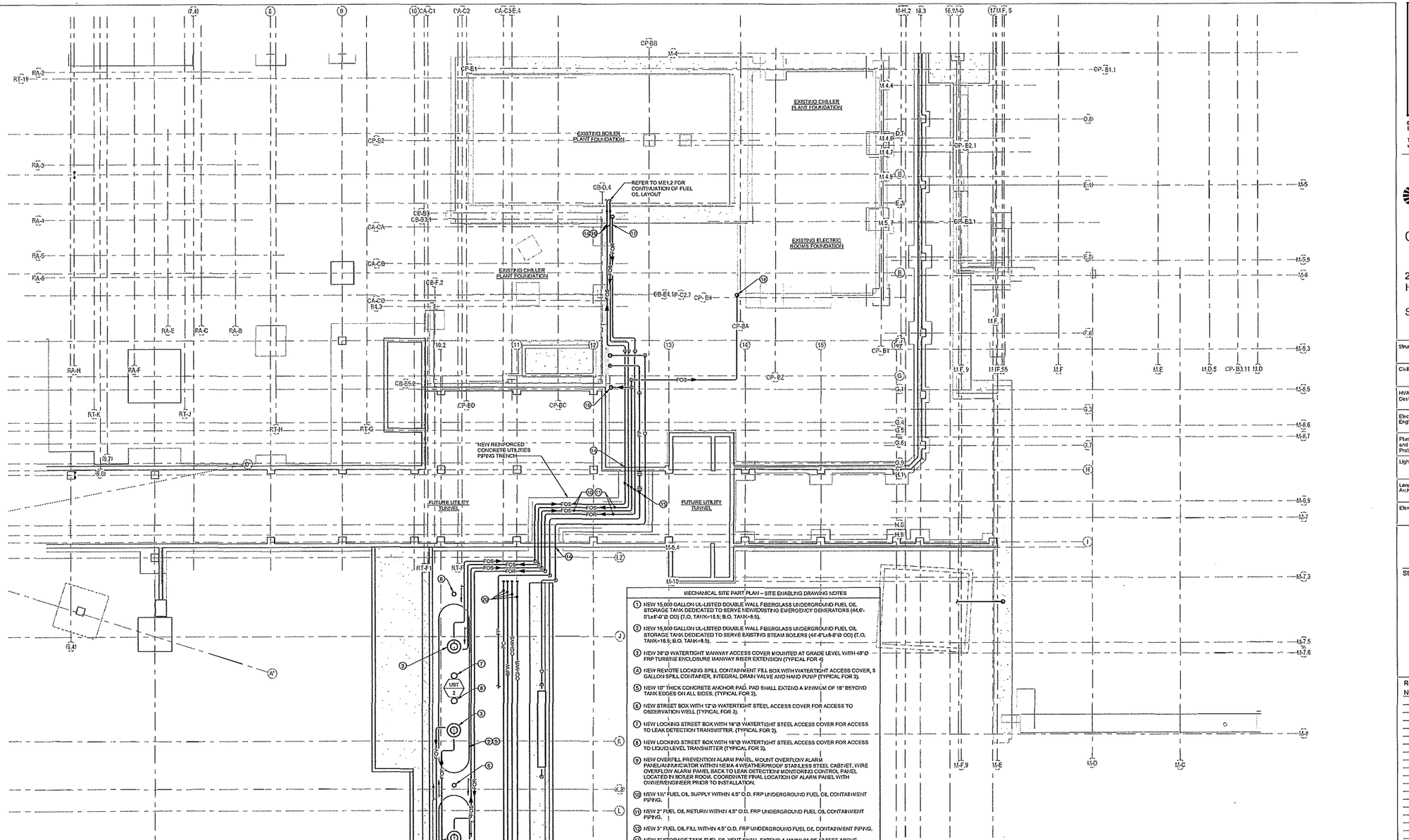
NOTE: TWO REQUIRED, ALSO FUEL PUMPS WITH HOUSINGS REQUIRED FOR EACH TANK
SEE MECHANICAL ENGINEERS DETAILS
DEADMEN AND TIEDOWNS REQUIRED,

FOR SPECIFICATIONS, SEE MECHANICAL DRAWINGS AND SPECS (DRAWING ME3.0 ETC.)
DEWATERING OF TANK PAD REQUIRED, GROUNDWATER OBSERVED AT EL 7.3 NAVD88 IN TANK AREA, SEASONAL ADJUSTMENT TO EL. 8.5'
CONTRACTOR TO PROVIDE SHORING AND DEWATERING PLAN FOR ENGINEERS APPROVAL.
TANK INSTALLATION TO FULLY MEET 310 CMR 80-1, EXPERIENCED TANK INSTALLER REQUIRED, SEE SPECIFICATIONS.
INSTALLATION TO BE TESTED AND CERTIFIED PER MA CODE REGULATIONS 310 CMR 80-1, COORDINATE FILLING AND REGISTRATION WITH GENERAL CONTRACTOR AND OWNER.

off 508-362-4541
fax 508-362-9880
downcape.com ©
down cape engineering, inc.
civil engineers
land surveyors
939 Main Street (Rte 6A)
YARMOUTHPORT MA 02675

Date: 5-17-19
Civil Detail Sheet 1

C 401



MECHANICAL SITE PART PLAN – SITE ENABLING DRAWING NOTES

1. NEW 15,000 GALLON UL-LISTED DOUBLE WALL FIBERGLASS UNDERGROUND FUEL OIL STORAGE TANK DEDICATED TO SERVE NEW/EXISTING EMERGENCY GENERATORS (44'6"L x 8'-0"Ø OD) (T.O. TANK=15.5; B.O. TANK=8.5).
2. NEW 15,000 GALLON UL-LISTED DOUBLE WALL FIBERGLASS UNDERGROUND FUEL OIL STORAGE TANK DEDICATED TO SERVE EXISTING STEAM BOILERS (44'-6"L x 8'-0"Ø OD) (T.O. TANK=15.5; B.O. TANK=8.5).
3. NEW 36"Ø WATERTIGHT MANWAY ACCESS COVER MOUNTED AT GRADE LEVEL WITH 48"Ø FRP TURBINE ENCLOSURE MANWAY RISER EXTENSION (TYPICAL FOR 4)
4. NEW REMOTE LOCKING SPILL CONTAINMENT FILL BOX WITH WATERTIGHT ACCESS COVER, 5 GALLON SPILL CONTAINER, INTEGRAL DRAIN VALVE AND HAND PUMP (TYPICAL FOR 2).
5. NEW 10" THICK CONCRETE ANCHOR PAD. PAD SHALL EXTEND A MINIMUM OF 18" BEYOND TANK EDGES ON ALL SIDES. (TYPICAL FOR 2).
6. NEW STREET BOX WITH 12"Ø WATERTIGHT STEEL ACCESS COVER FOR ACCESS TO OBSERVATION WELL (TYPICAL FOR 3).
7. NEW LOCKING STREET BOX WITH 18"Ø WATERTIGHT STEEL ACCESS COVER FOR ACCESS TO LEAK DETECTION TRANSMITTER. (TYPICAL FOR 2).
8. NEW LOCKING STREET BOX WITH 18"Ø WATERTIGHT STEEL ACCESS COVER FOR ACCESS TO LIQUID LEVEL TRANSMITTER (TYPICAL FOR 2).
9. NEW OVERFILL PREVENTION ALARM PANEL MOUNT OVERFLOW ALARM PANEL/ANNUNCIATOR WITHIN NEMA 4 WEATHERPROOF STAINLESS STEEL CABINET. WIRE OVERFLOW ALARM PANEL BACK TO LEAK DETECTION MONITORING CONTROL PANEL LOCATED IN BOILER ROOM. COORDINATE FINAL LOCATION OF ALARM PANEL WITH OWNER/ENGINEER PRIOR TO INSTALLATION.
10. NEW 1½" FUEL OIL SUPPLY WITHIN 4.5" O.D. FRP UNDERGROUND FUEL OIL CONTAINMENT PIPING.
11. NEW 2" FUEL OIL RETURN WITHIN 4.5" O.D. FRP UNDERGROUND FUEL OIL CONTAINMENT PIPING.
12. NEW 3" FUEL OIL FILL WITHIN 4.5" O.D. FRP UNDERGROUND FUEL OIL CONTAINMENT PIPING.
13. NEW 3" STORAGE TANK FUEL OIL VENT SHALL EXTEND A MINIMUM OF 12 FEET ABOVE GRADE AND TERMINATE WITH A WEATHER PROOF VENT PROTECTOR. VENT PIPING SHALL BE SECURELY ANCHORED TO NEW GALVANIZED STEEL POST (FURNISHED AND INSTALLED BY SITE CONTRACTOR) (TYPICAL FOR 2).
14. MECHANICAL CONTRACTOR SHALL PROVIDE LINK-SEAL AT TRENCH AND FOUNDATION WALL PENETRATION WHERE CONDUITS ENTER INTO CENTRAL UTILITY PLANT TO PROVIDE WATERTIGHT INSTALLATION (TYPICAL FOR 10 PENETRATIONS)
15. NEW FUEL OIL SUPPLY AND FUEL OIL RETURN PIPING SHALL BE RUN WITHIN NEW REINFORCED CONCRETE UTILITIES PIPING TRENCH. UTILITIES PIPING TRENCH SHALL EXTEND BENEATH THE UTILITIES TUNNEL AND EXTERIOR AREAWAY. SITE UTILITIES CONTRACTOR SHALL PROVIDE WEATHERPROOF COVERING OVER UTILITIES TRENCH TO KEEP INTERIOR OF TRENCH DRY. REFER TO CIVIL, ARCHITECTURAL, STRUCTURAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION RELATED TO UTILITIES TRENCH.
16. NEW FUEL OIL SUPPLY AND RETURN PIPING SHALL EXTEND THROUGH FOUNDATION WALL AND EXTEND TO EXISTING STEAM BOILER (B-10). FUEL OIL SUPPLY AND RETURN PIPING WITHIN THE MECHANICAL ROOM SHALL RUN EXPOSED (I.E. NOT WITHIN CONTAINMENT PIPING).
17. NEW FUEL OIL RETURN PIPING SHALL RISE UP ALONG CENTRAL PLANT AND PENETRATE THROUGH EXTERIOR WALL. FUEL OIL RETURN PIPING SHALL EXTEND TO NEW 150-GALLON FUEL OIL DAY TANK WITHIN BOILER ROOM. FUEL OIL RETURN PIPING WITHIN THE MECHANICAL ROOM SHALL RUN EXPOSED (I.E. NOT WITHIN CONTAINMENT PIPING).
18. FUEL OIL SUPPLY PIPING SHALL EXTEND UP ALONG EXTERIOR WALL OF CENTRAL UTILITY PLANT TO NEW DAY TANKS INSTALLED WITHIN THREE (3) EXISTING 1,000-Kw EMERGENCY GENERATOR ENCLOSURES MOUNTED ON EXISTING CENTRAL UTILITY PLANT ROOF.
19. FUEL OIL SUPPLY PIPING SHALL EXTEND UP ALONG EXTERIOR WALL OF CHILLER PLANT EXPANSION TO NEW DAY TANK INSTALLED WITHIN NEW 1,000-Kw EMERGENCY GENERATOR ENCLOSURE MOUNTED ON CHILLER PLANT EXPANSION ROOF.
20. NEW 8" LOW PRESSURE STEAM, 1½" LOW PRESSURE CONDENSATE, 2" BOILER FEEDWATER, 4" COGEN HOT WATER SUPPLY AND 4" COGEN HOT WATER RETURN PIPING SHALL PENETRATE THROUGH NEW UTILITIES TUNNEL WALL. PIPING SHALL BE CAPPED WITHIN PROXIMITY OF FUTURE UTILITIES TUNNEL FOR FUTURE INSTALLATION OF COGENERATION UNIT.
21. NEW 8" LOW PRESSURE STEAM, 1½" LOW PRESSURE CONDENSATE, 2" BOILER FEEDWATER, 4" COGEN HOT WATER SUPPLY AND 4" COGEN HOT WATER RETURN PIPING SHALL EXTEND TO NEW COGEN PIPING MANHOLE. PIPING SHALL BE CAPPED WITHIN MANHOLE FOR FUTURE INSTALLATION OF COGENERATION UNIT.

TSOI KOBUS DESIGN
60 STATE STREET, SUITE 1800
Boston, MA 02109
Tel: 617-475-4000 Fax: 617-475-4445
www.tsoikobus.design

CAPE COD HEALTHCARE

CAPE COD HOSPITAL

27 Park Street
Hyannis, MA 02601

SITE ENABLING SUBMISSION

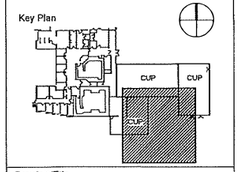
Structural	ODEH ENGINEERS 1223 Mineral Spring Ave, North Providence, RI 02904 Tel. (401) 726-1771
Civil	DOWN CAPE ENGINEERING, INC 939 Main St., Yarmouthport, MA Tel. (508) 362-4541
HVAC Design	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Electrical Engineer	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Plumbing and Fire Protection	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Lighting	LAM PARTNERS 84 Sherman St., Cambridge MA 02140 Tel. (617) 354-4502
Landscape Architect	STIMSON 228 Norfolk St., Cambridge MA 02139 Tel. (617) 876-9500
Elevators	VDA 100 Summer Street, Suite 1600, Boston, MA 02110 Tel. (617)574-5099

Stamp

Revisions

No.	Description	Date

Key Plan



Drawing Title
MECHANICAL SITE ENABLING UNDERGROUND NEW WORK

Job Number	2018101
Drawn by	Author
Checked	Checker
Date	9/21/19
Scale	1" = 10'-0"

Drawing No.
ME1.0

9/21/2019 4:25:21 PM BIM 360://Cape Cod Hospital New Tower
Addendum#2/21-24 ES_MEP_Central_Plant.rvt

EMERGENCY GENERATOR FUEL OIL PIPING FLOW DIAGRAM

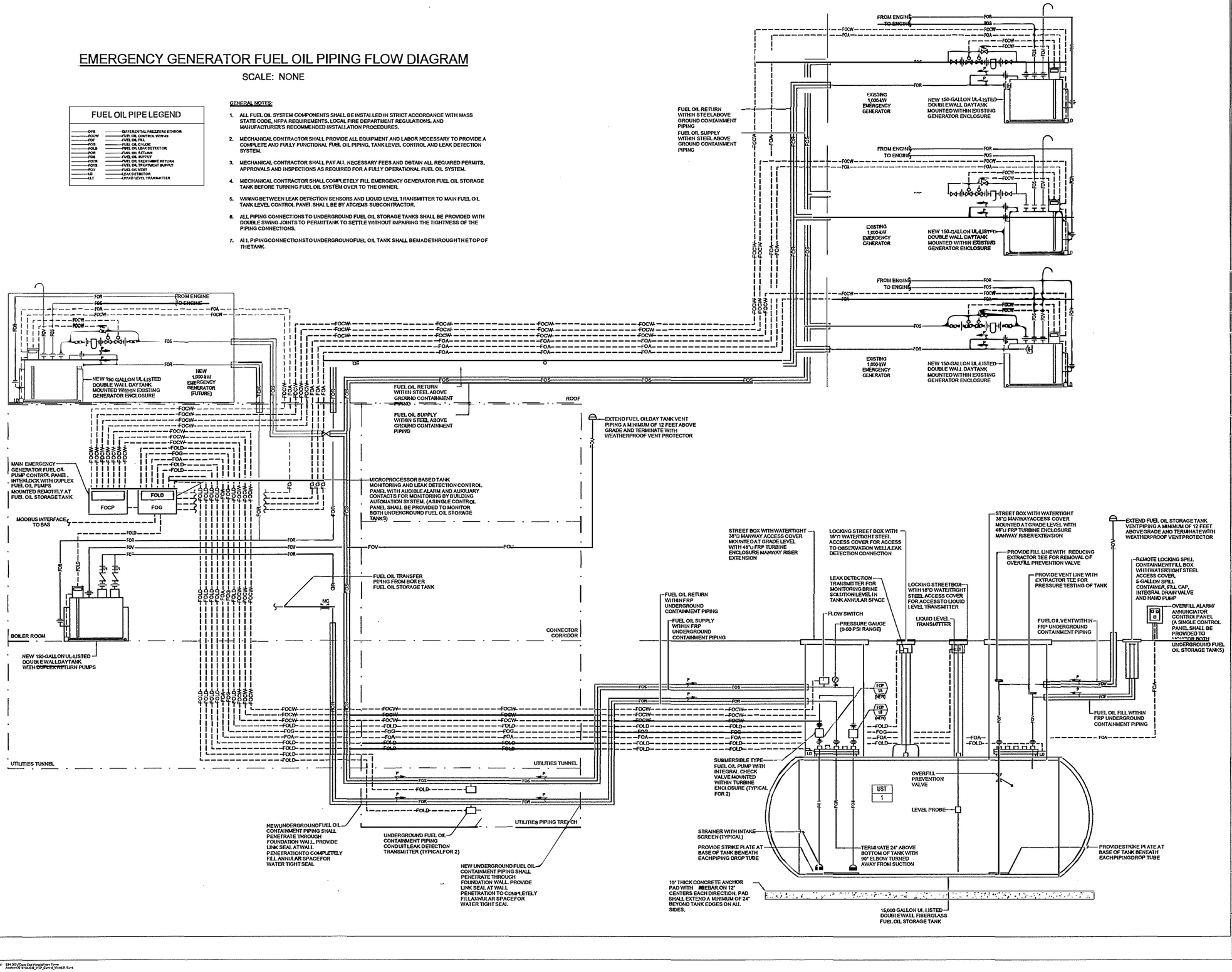
SCALE: NONE

FUEL OIL PIPE LEGEND

DPS	DIFFERENTIAL PRESSURE SENSOR
FOCW	FUEL OIL CONTROL WIRING
FOF	FUEL OIL FILL
FOG	FUEL OIL GAUGE
FOLD	FUEL OIL LEAK DETECTOR
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOTR	FUEL OIL TREATMENT RETURN
FOTS	FUEL OIL TREATMENT SUPPLY
FOV	FUEL OIL VENT
LD	LEAK DETECTOR
LLT	LIQUID LEVEL TRANSMITTER

GENERAL NOTES:

1. ALL FUEL OIL SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MASS STATE CODE, NFPA REQUIREMENTS, LOCAL FIRE DEPARTMENT REGULATIONS, AND MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.
2. MECHANICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND LABOR NECESSARY TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL FUEL OIL PIPING, TANK LEVEL CONTROL AND LEAK DETECTION SYSTEM.
3. MECHANICAL CONTRACTOR SHALL PAY ALL NECESSARY FEES AND OBTAIN ALL REQUIRED PERMITS, APPROVALS AND INSPECTIONS AS REQUIRED FOR A FULLY OPERATIONAL FUEL OIL SYSTEM.
4. MECHANICAL CONTRACTOR SHALL COMPLETELY FILL EMERGENCY GENERATOR FUEL OIL STORAGE TANK BEFORE TURNING FUEL OIL SYSTEM OVER TO THE OWNER.
5. WIRING BETWEEN LEAK DETECTION SENSORS AND LIQUID LEVEL TRANSMITTER TO MAIN FUEL OIL TANK LEVEL CONTROL PANEL SHALL BE BY ATC/EMS SUBCONTRACTOR.
6. ALL PIPING CONNECTIONS TO UNDERGROUND FUEL OIL STORAGE TANKS SHALL BE PROVIDED WITH DOUBLE SWING JOINTS TO PERMIT TANK TO SETTLE WITHOUT IMPAIRING THE TIGHTNESS OF THE PIPING CONNECTIONS.
7. ALL PIPING CONNECTIONS TO UNDERGROUND FUEL OIL TANK SHALL BE MADE THROUGH THE TOP OF THE TANK.



TSOI KOBUS DESIGN

60 STATE STREET, SUITE 1800
Boston, MA 02109

Tel: 617-475-4000 Fax: 617-475-4445
www.tsoikobus.design

CAPE COD HEALTHCARE

CAPE COD HOSPITAL

27 Park Street
Hyannis, MA 02601

SITE ENABLING SUBMISSION

Structural	ODEH ENGINEERS 1223 Mineral Spring Ave., North Providence, RI 02904 Tel. (401) 724-1771
Civil	DOWN CAPE ENGINEERING, INC 939 Main St., Yarmouthport, MA Tel. (508) 362-4541
HVAC Design	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Electrical Engineer	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Plumbing and Fire Protection	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Lighting	LAM PARTNERS 64 Sherman St., Cambridge MA 02140 Tel. (617) 354-5302
Landscape Architect	STINSON 283 Norfolk St., Cambridge MA 02139 Tel. (617) 876-8950
Elevators	VDA 100 Summer Street, Suite 1600, Boston, MA 02110 Tel. (617) 574-5099

Stamp

Revisions

No.	Description	Date

Key Plan

Drawing Title
MECHANICAL SITE ENABLING EMERGENCY GENERATOR FUEL OIL DIAGRAM

Job Number	2018104
Drawn by	Author
Checked	Checker
Date	6/17/19
Scale	NTS

Drawing No.
ME2.0

6/17/2019 4:25:47 PM S:\Projects\2018\2018104 Cape Cod Hospital Main Tower\Architect\Revit\2018_V19_Sept_Central_R19.rvt

EMERGENCY GENERATOR FUEL OIL PIPING FLOW DIAGRAM

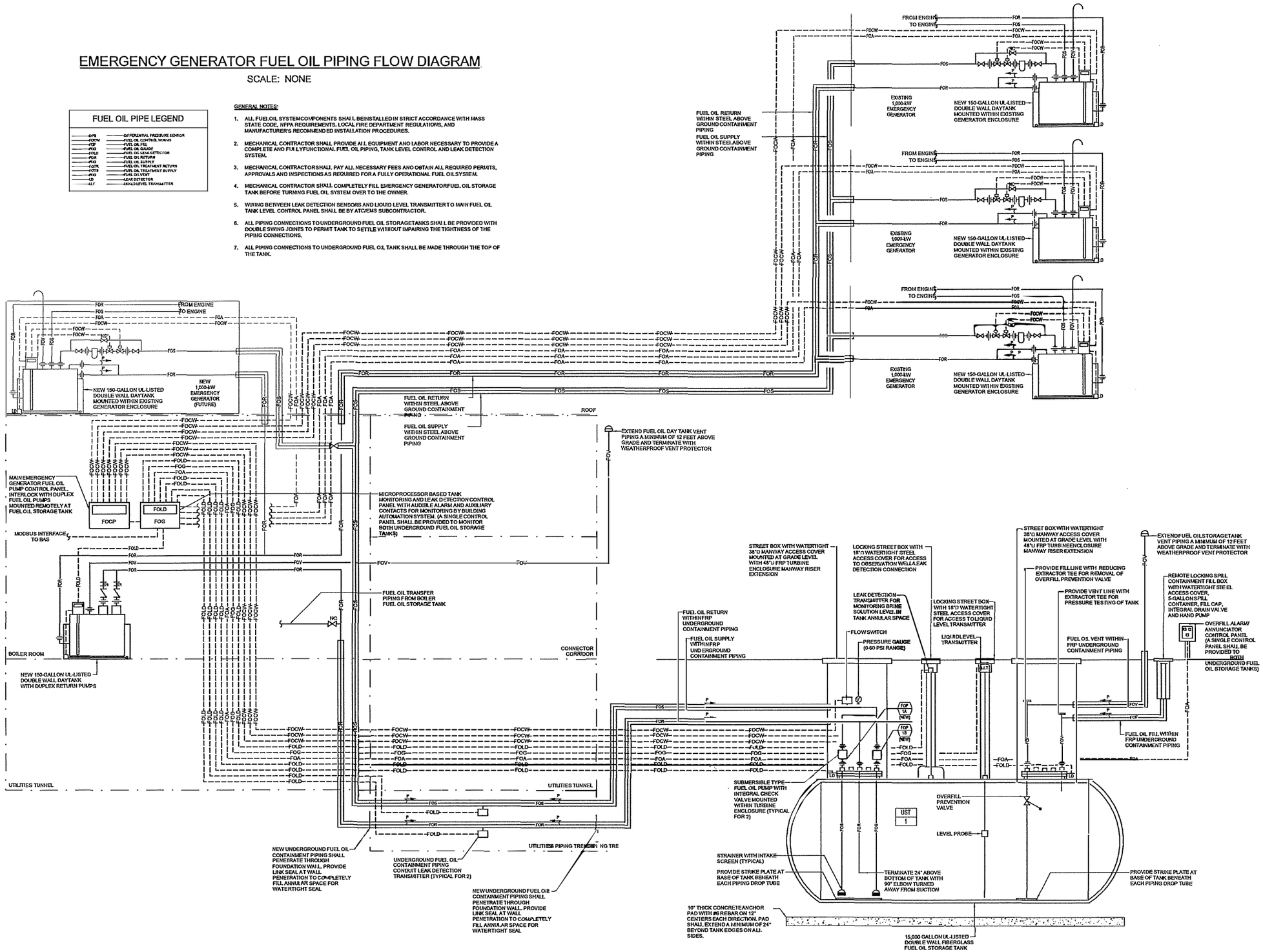
SCALE: NONE

FUEL OIL PIPE LEGEND

DPS	DIFFERENTIAL PRESSURE SENSOR
FOCW	FUEL OIL CONTROL WIRING
FOF	FUEL OIL FILL
FOG	FUEL OIL GAUGE
FOLD	FUEL OIL LEAK DETECTOR
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOTR	FUEL OIL TREATMENT RETURN
FOTS	FUEL OIL TREATMENT SUPPLY
FOV	FUEL OIL VENT
LD	LEAK DETECTOR
LLT	LIQUID LEVEL TRANSMITTER

GENERAL NOTES:

1. ALL FUEL OIL SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MASS STATE CODE, NFPA REQUIREMENTS, LOCAL FIRE DEPARTMENT REGULATIONS, AND MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.
2. MECHANICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND LABOR NECESSARY TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL FUEL OIL PIPING, TANK LEVEL CONTROL AND LEAK DETECTION SYSTEM.
3. MECHANICAL CONTRACTOR SHALL PAY ALL NECESSARY FEES AND OBTAIN ALL REQUIRED PERMITS, APPROVALS AND INSPECTIONS AS REQUIRED FOR A FULLY OPERATIONAL FUEL OIL SYSTEM.
4. MECHANICAL CONTRACTOR SHALL COMPLETELY FILL EMERGENCY GENERATOR FUEL OIL STORAGE TANK BEFORE TURNING FUEL OIL SYSTEM OVER TO THE OWNER.
5. WIRING BETWEEN LEAK DETECTION SENSORS AND LIQUID LEVEL TRANSMITTER TO MAIN FUEL OIL TANK LEVEL CONTROL PANEL SHALL BE BY ATC/EMS SUBCONTRACTOR.
6. ALL PIPING CONNECTIONS TO UNDERGROUND FUEL OIL STORAGE TANKS SHALL BE PROVIDED WITH DOUBLE SWING JOINTS TO PERMIT TANK TO SETTLE WITHOUT IMPAIRING THE TIGHTNESS OF THE PIPING CONNECTIONS.
7. ALL PIPING CONNECTIONS TO UNDERGROUND FUEL OIL TANK SHALL BE MADE THROUGH THE TOP OF THE TANK.



TSOI KOBUS DESIGN
60 STATE STREET, SUITE 1900
Boston, MA 02109
Tel: 617-475-4000 Fax: 617-475-4445
www.tsoikobus.design

CAPE COD HEALTHCARE

CAPE COD HOSPITAL

27 Park Street
Hyannis, MA 02601

SITE ENABLING SUBMISSION

Structural	ODEH ENGINEERS 1223 Mineral Spring Ave., North Providence, RI 02904 Tel. (401) 726-7171
Civil	DOWN CAPE ENGINEERING, INC 939 Main St., Yarmouthport, MA Tel. (508) 362-4541
HVAC Design	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Electrical Engineer	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Plumbing and Fire Protection	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Lighting	LAM PARTNERS 84 Sherman St., Cambridge MA 02140 Tel. (617) 354-4502
Landscape Architect	STIMSON 228 North St., Cambridge MA 02139 Tel. (617) 876 6900
Elevators	VDA 100 Summer Street, Suite 1600, Boston, MA 02110 Tel. (617) 674-5099

Stamp

Revisions

No.	Description	Date

Key Plan

Drawing Title
MECHANICAL SITE ENABLING EMERGENCY GENERATOR FUEL OIL DIAGRAM

Job Number	20181 04
Drawn by	Author
Checked	Checker
Date	05/17/19
Scale	NTS

Drawing No.
ME2.0

BOILER FUEL OIL PIPING FLOW DIAGRAM

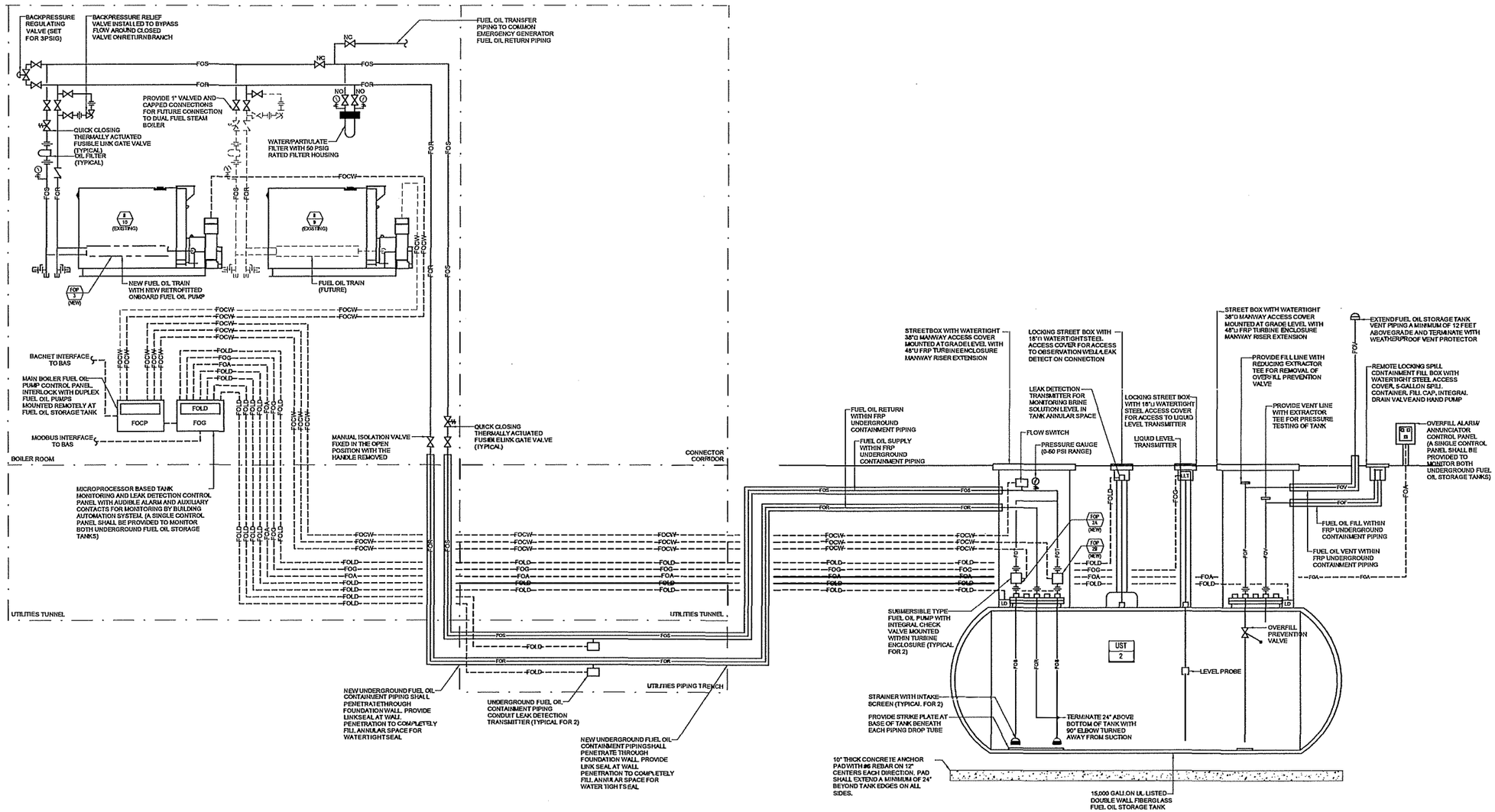
SCALE: NONE

FUEL OIL PIPE LEGEND

DPS	DIFFERENTIAL PRESSURE SENSOR
FDA	FUEL OIL ALARM WIRING
FOCW	FUEL OIL CONTROL WIRING
FOF	FUEL OIL FILL
FOG	FUEL OIL GAUGE
FOLD	FUEL OIL LEAK DETECTION
FOR	FUEL OIL RETURN
FOS	FUEL OILSUPPLY
FOTR	FUEL OIL TREATMENT RETURN
FOTS	FUEL OIL TREATMENT SUPPLY
FOV	FUEL OIL VENT
FS	FLOW SWITCH
LD	LEAK DETECTOR
LLT	LIQUID LEVEL TRANSMITTER

GENERAL NOTES:

1. ALL FUEL OIL SYSTEM COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MASS STATE CODE, NFPA REQUIREMENTS, LOCAL FIRE DEPARTMENT REGULATIONS, AND MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.
2. MECHANICAL CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND LABOR NECESSARY TO PROVIDE A COMPLETE AND FULLY FUNCTIONAL FUEL OIL PIPING, TANK LEVEL CONTROL AND LEAK DETECTION SYSTEM.
3. MECHANICAL CONTRACTOR SHALL PAY ALL NECESSARY FEES AND OBTAIN ALL REQUIRED PERMITS, APPROVALS AND INSPECTIONS AS REQUIRED FOR A FULLY OPERATIONAL FUEL OIL SYSTEM.
4. MECHANICAL CONTRACTOR SHALL COMPLETELY FILL BOILER FUEL OIL STORAGE TANK BEFORE TURNING FUEL OIL SYSTEM OVER TO THE OWNER.
5. WIRING BETWEEN LEAK DETECTION SENSORS AND LIQUID LEVEL TRANSMITTER TO MAIN FUEL OIL TANK LEVEL CONTROL PANEL SHALL BE BY ATC/EMS SUBCONTRACTOR.
6. ALL PIPING CONNECTIONS TO UNDERGROUND FUEL OIL STORAGE TANKS SHALL BE PROVIDED WITH DOUBLE SWING JOINTS TO PERMIT TANK TO SETTLE WITHOUT IMPAIRING THE TIGHTNESS OF THE PIPING CONNECTIONS.
7. ALL PIPING CONNECTIONS TO UNDERGROUND FUEL OIL TANK SHALL BE MADE THROUGH THE TOP OF THE TANK.
8. EXISTING DUAL FUEL STEAM BOILER (B-10) SHALL BE RETROFITTED WITH NEW ON-BOARD FUEL OIL PUMP. FINAL FUEL OIL PIPING CONFIGURATIONS AND COMPONENTS SHALL BE COORDINATED WITH THE BOILER MANUFACTURER'S APPROVED PIPING SUBMITTALS AND PIPING DIAGRAMS.



TSOI KOBUS **DESIGN**

60 STATE STREET, SUITE 1800
Boston, MA 02109

Tel: 617-475-4000 Fax: 617-475-4445
www.tsoikobus.design

CAPE COD HEALTHCARE

CAPE COD HOSPITAL

27 Park Street
Hyannis, MA 02601

SITE ENABLING SUBMISSION

Structural	OOBH ENGINEERS 1223 Mineral Spring Ave., North Providence, RI 02904 Tel. (401) 724-1771
Civil	DOWN CAPE ENGINEERING, INC 939 Main St., Yarmouthport, MA Tel. (508) 362-4541
HVAC Design	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508)647-9280
Electrical Engineer	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9280
Plumbing and Fire Protection	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Lighting	LAM PARTNERS 84 Sherman St, Cambridge MA 02140 Tel. (617) 354-4502
Landscape Architect	STIMSON 228 Norfolk St., Cambridge MA 02139 Tel. (617) 876-6980
Elevators	VDA 100 Summer Street, Suite 1600, Boston, MA 02110 Tel. (617) 574-5099

Stamp

Revisions

No.	Description	Date

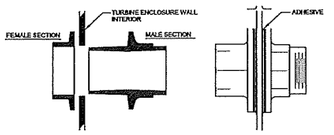
Key Plan

Drawing Title
MECHANICAL SITE ENABLING
BOILER FUEL OIL DIAGRAM

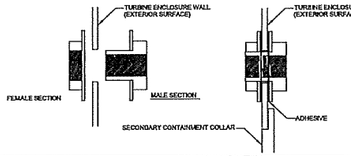
Job Number	2018101
Drawn by	Author
Checked	Checker
Date	05/17/19
Scale	NTS

Drawing No.
ME2.1

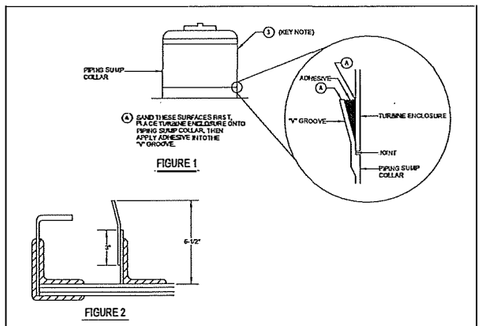
5/17/2019 4:25:55 PM E:\MCJ\Cape Cod Hospital\New Tower Addition\2018\104_ES_VOP_Cent-x_Model.R15.rvt



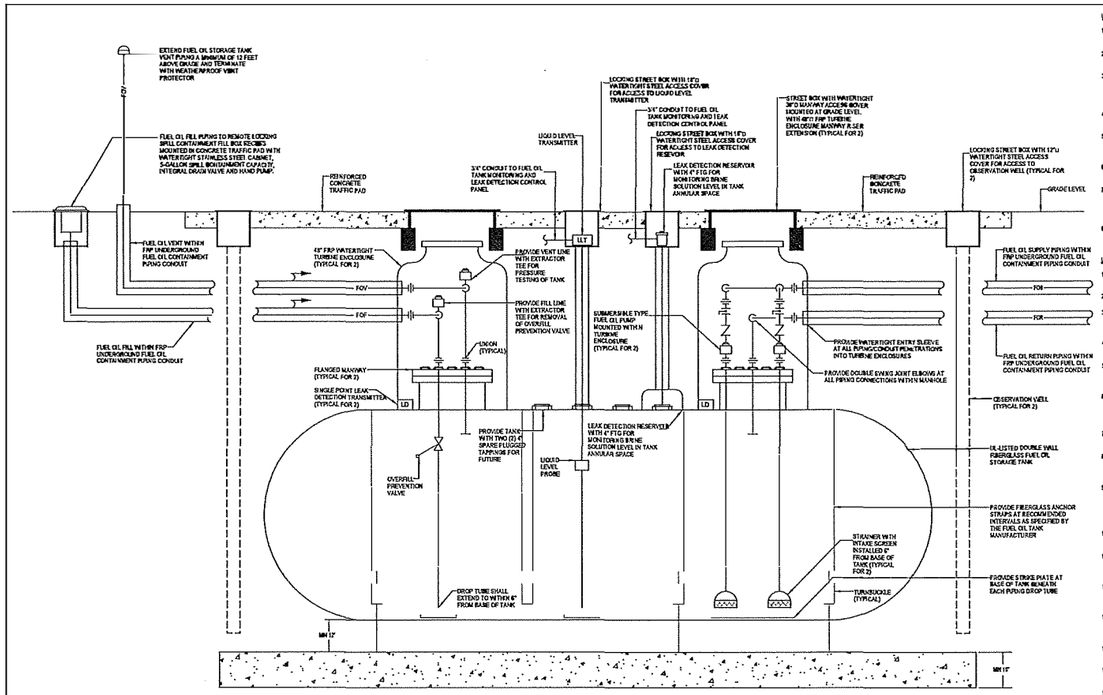
TURBINE ENCLOSURE SECONDARY CONTAINMENT CONDUIT PENETRATION COUPLING KIT DETAIL | NTS



TURBINE ENCLOSURE ELECTRICAL/CONTROLS CONDUIT PENETRATION COUPLING KIT DETAIL | NTS



CONTAINMENT COLLAR FOR TURBINE ENCLOSURE DETAIL | NTS



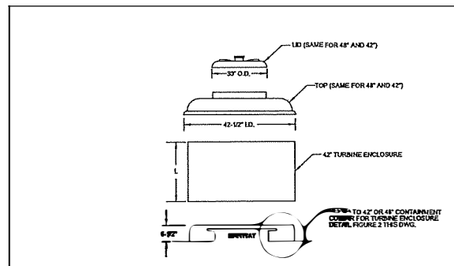
UNDERGROUND FUEL OIL STORAGE TANK DETAIL | NTS

UNDERGROUND FUEL OIL STORAGE TANK DETAIL NOTES:

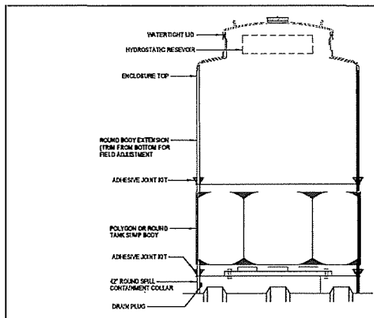
1. REFER TO THE FUEL OIL STORAGE TANK MANUFACTURER'S RECOMMENDED INSTALLATION GUIDELINES FOR FURTHER INSTALLATION REQUIREMENTS REGARDING TRENCH EXCAVATION, ANCHORING, BACKFILLING, TANK PADS, ETC.
2. EACH FUEL OIL STORAGE TANK SHALL BE PROVIDED WITH A FACTORY INSTALLED MANWAY ACCESS LADDER. ACCESS LADDER SHALL BE FABRICATED FROM STAINLESS STEEL WITH SLIP RESISTANT TREADS.
3. OBSERVATION WELL: INSTALL 4 INCH DIAMETER PVC WELL SCREEN, FACTORY SLOTTED, WITH MAXIMUM 0.020 INCH SLOTS EXTENDING TO WITHIN 12 INCHES OF GRADE. CAP TOP AND BOTTOM OF WELL PIPE AND INSTALL MANHOLE AT 1 INCH ABOVE CONCRETE TRAFFIC PAD. OBSERVATION WELL MUST BE PLUMB. BOTTOM OF WELL MUST EXTEND DOWN TO LOW POINT OF TANK.
4. SECONDARY FUEL OIL CONTAINMENT PIPING CONDUIT SHALL BE PROPERLY SIZED PER THE MANUFACTURER'S RECOMMENDATIONS. PIPING SIZES INDICATED ON THE DRAWINGS ARE CARRIER SERVICE PIPING SIZES ONLY.
5. ALL SECONDARY FUEL OIL CONTAINMENT PIPING CONDUIT SHALL BE PRESSURE TESTED AS SPECIFIED IN THE PIPING MANUFACTURER'S RECOMMENDED INSTALLATION GUIDELINES. AN OWNER'S REPRESENTATIVE MUST BE PRESENT DURING THE PRESSURE TESTING PROCEDURE.
6. INSTALL A 24 INCH ROUND RIGID ELECTRICAL CONDUIT FROM CONTAINMENT SUMP AND STORAGE TANK SECONDARY CONTAINMENT LEAK DETECTION SENSORS TO LEAK DETECTION PANEL.
7. 48"ø FIBERGLASS TURBINE ENCLOSURE (PUMP/S SUMP) SHALL BE INSTALLED TO ASSURE PROPER ALIGNMENT OF FUEL OIL PIPING AND ELECTRICAL/CONTROLS CONDUITS. ALL ELECTRICAL PENETRATIONS SHALL BE WITHIN 6 INCHES OF TOP OF SUMP UTILIZING COUPLING KITS FURNISHED BY MANUFACTURER. ALL PIPING SHALL BE ORIENTED SUCH THAT ALL FITTINGS ARE VISIBLE AND SERVICEABLE WITHIN THE 48 INCH DIAMETER FIBERGLASS SUMP.
8. EACH FUEL OIL STORAGE TANK SHALL BE PRESSURE TESTED TO A MAXIMUM PRESSURE OF 3.5 PSIG FOR A PERIOD OF NOT LESS THAN ONE HOUR PRIOR TO INSTALLING TANK.

UNDERGROUND FUEL OIL STORAGE TANK INSTALLATION AND BACKFILL NOTES:

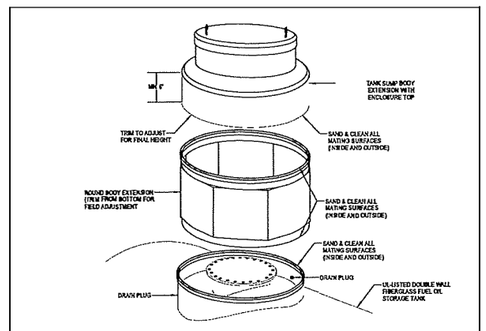
1. PROVIDE A MINIMUM OF 24" EXCAVATION CLEARANCE ON ALL SIDES OF TANK. PROVIDE SHORING AS REQUIRED TO MEET O.S.H.A. EXCAVATION STANDARDS.
2. DO NOT USE APPROVED BACKFILL WITH SAND OR NATIVE SOIL. DO NOT BACKFILL TANK WITH SAND OR NATIVE SOIL.
3. REPLACE ALL EXCAVATED NATIVE SOIL WITH APPROVED BACKFILL OF PROPER SIZE AND GRADATION. APPROVED BACKFILL SHALL COMPLY WITH ASTM C-33 FOR QUALITY AND SOUNDNESS. SIEVE ANALYSIS SHALL BE ATTACHED TO THE TANK INSTALLATION CHECKLIST.
4. ALL TANK EXCAVATIONS SHALL BE PROVIDED WITH A MINIMUM 12" AND A MAXIMUM 24" OF APPROVED BACKFILL BETWEEN THE BOTTOM OF THE FUEL OIL STORAGE TANKS AND THE TOP OF THE CONCRETE ANCHOR PAD.
5. APPROVED BEDDING SHALL BE A MIXTURE OF PEA GRAVEL OR CRUSHED STONE BENEATH FUEL OIL STORAGE TANK. CRUSHED STONE OR GRAVEL SHALL BE WASHED WITH, WITH ANGULAR PARTICLE SIZE NO LARGER THAN 1/4" AND NO MORE THAN 5% PASSING A #8 SIEVE. DRY GRAVEL DENSITY MUST BE MINIMUM OF 93 POUNDS PER CUBIC FOOT.
6. INSTALLING CONTRACTOR SHALL SET TANK DIRECTLY ON BEDDING MATERIAL. PLACE FIRST 12" LIFT OF APPROVED BACKFILL MATERIAL EVENLY AROUND THE TANK. BACKFILL MATERIAL SHALL BE TAMPED TO ENSURE THAT NO VOIDS ARE PRESENT TO ENSURE THAT THE TANK IS FULLY SUPPORTED. REPEAT THIS PROCESS FOR SECOND 12" LIFT. ONCE SECOND LIFT HAS BEEN TAMPED, BACKFILL MAY BE BROUGHT TO TOP OF TANK WITHOUT ADDITIONAL HANDWORK.
7. ONCE BACKFILL IS EVEN AT TOP OF TANK, THE TANK COMPARTMENTS SHALL BE FILLED WITH APPROVED BALLASTING MATERIAL TO MINIMIZE THE CHANCE OF BUOYANCY.
8. INSTALLING CONTRACTOR SHALL TAKE VERTICAL DIAMETER MEASUREMENTS AS REQUIRED BY THE TANK MANUFACTURER TO ENSURE THAT THE STORAGE TANK RETAINS ITS SHAPE DURING THE ANCHORING AND BACKFILLING PROCESS.
9. INSTALLING CONTRACTOR SHALL ENSURE THAT DOWNWARD FORCES FROM LOADS CARRIED BY ADJACENT FOUNDATIONS AND FOOTINGS CONSTRUCTED BEFORE OR AFTER TANK INSTALLATION ARE NOT TRANSMITTED TO THE FUEL OIL STORAGE TANKS. INSTALLING CONTRACTOR SHALL ENSURE THAT THE FUEL OIL STORAGE TANKS ARE NOT LOCATED WITHIN THE LOAD DISTRIBUTION OF ADJACENT SLABS, FOUNDATIONS AND FOOTINGS USING 45° AS THE ANGLE OF THE PROJECTED LOADS.
10. MINIMUM DEPTH OF BURIAL SHALL BE 2'-0" ALONG WITH PROPER MECHANICAL ANCHORING SHALL BE PROVIDED TO OFFSET BUOYANT FORCES. DEPTH OF COVER ABOVE FUEL OIL STORAGE TANK SHALL NOT EXCEED 7'-0".
11. FUEL OIL STORAGE TANK SHALL BE PROVIDED WITH A MINIMUM OF 3'-0" BACKFILL. BACKFILL SHALL BE TAMPED COMPACTLY IN PLACE SO AS TO ENSURE A STABLE SURFACE. NO ROCK SHALL BE USED WITHIN 24 INCHES OF THE TANK. BACKFILL SHALL BE COMPACTED TO MEET H-20 HIGHWAY LOADING REQUIREMENTS.
12. PROVIDE ADDITIONAL APPROVED FILL REQUIRED ABOVE AND BEYOND THAT NECESSARY TO BACKFILL FOR THE TANK INSTALLATION. THIS FILL SHALL BE INSTALLED TO FINISH AND GRADE THE AREA SUITABLE FOR THE INSTALLATION OF THE TRAFFIC PAD.
13. PROVIDE REINFORCED CONCRETE TRAFFIC PAD RATED FOR H-20 HIGHWAY LOADING INSTALLED AT GRADE LEVEL. TRAFFIC PAD SHALL EXTEND A MINIMUM OF 12" BEYOND TANK PERIMETER IN ALL DIRECTIONS. REFER TO SITE/CIVIL DRAWINGS FOR FURTHER REQUIREMENTS REGARDING TRAFFIC PAD.
14. SITE CONTRACTOR SHALL REMOVE ALL REMAINING EXCESS SOILS AND EXCAVATED MATERIALS AND DISPOSE OF IN A LEGAL MANNER.
15. CONTRACTOR SHALL SUBMIT PROPOSED TANK ANCHORING MATERIALS AND PROCEDURES FOR REVIEW BY THE OWNER, ENGINEER AND LOCAL AUTHORITIES PRIOR TO INSTALLATION OF THE FUEL OIL STORAGE TANK.
16. PROVIDE MINIMUM 18" THICK CONCRETE ANCHOR PAD WITH #6 REBAR ON 12" CENTERS EACH DIRECTION. PAD SHALL EXTEND A MINIMUM OF 24" BEYOND FUEL OIL STORAGE TANKS ON ALL SIDES.



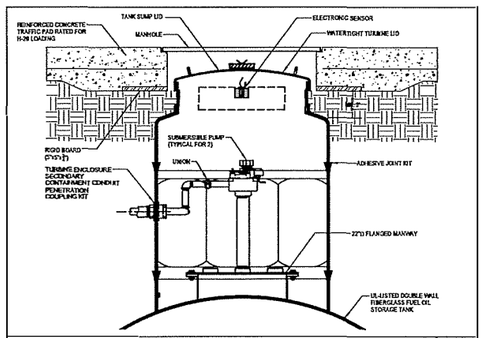
42" TURBINE ENCLOSURE SYSTEM DETAIL | NTS



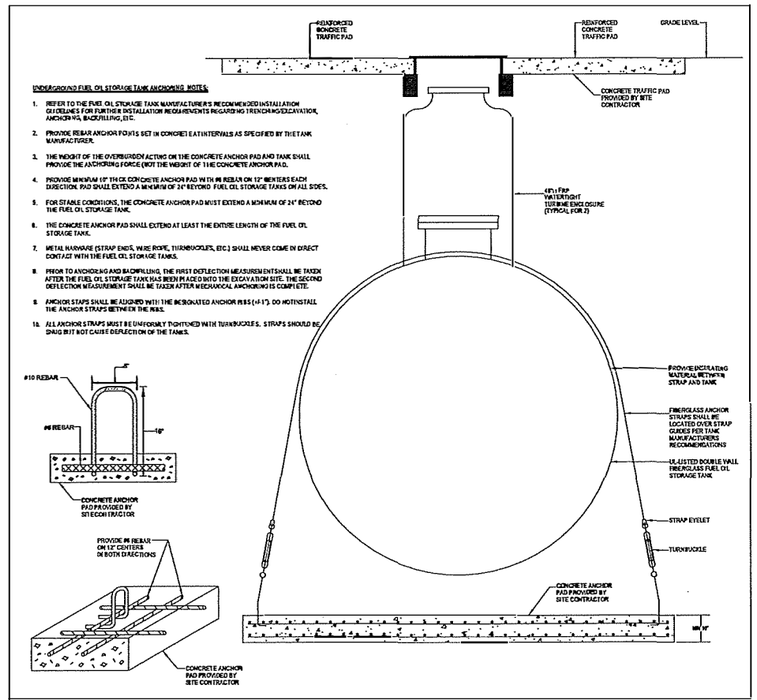
WATERTIGHT TANK SUMP W/ ADHEIVE JOINT DETAIL | NTS



42" TURBINE ENCLOSURE SYSTEM DETAIL | NTS



42" TURBINE ENCLOSURE SYSTEM DETAIL | NTS



UNDERGROUND FUEL OIL STORAGE TANK ANCHORING DETAIL | NTS

UNDERGROUND FUEL OIL STORAGE TANK ANCHORING NOTES:

1. REFER TO THE FUEL OIL STORAGE TANK MANUFACTURER'S RECOMMENDED INSTALLATION GUIDELINES FOR FURTHER INSTALLATION REQUIREMENTS REGARDING TRENCHING/EXCAVATION, ANCHORING, BACKFILLING, ETC.
2. PROVIDE REBAR ANCHOR FOILS SET IN CONCRETE AT INTERVALS AS SPECIFIED BY THE TANK MANUFACTURER.
3. THE WEIGHT OF THE OVERBURDEN ACTING ON THE CONCRETE ANCHOR PAD AND TANK SHALL PROVIDE THE ANCHORING FORCE (NOT THE WEIGHT OF THE CONCRETE ANCHOR PAD).
4. PROVIDE MINIMUM 18" THICK CONCRETE ANCHOR PAD WITH #6 REBAR ON 12" CENTERS EACH DIRECTION. PAD SHALL EXTEND A MINIMUM OF 24" BEYOND FUEL OIL STORAGE TANKS ON ALL SIDES.
5. FOR STABLE CONDITIONS, THE CONCRETE ANCHOR PAD MUST EXTEND A MINIMUM OF 24" BEYOND THE FUEL OIL STORAGE TANK.
6. THE CONCRETE ANCHOR PAD SHALL EXTEND AT LEAST THE ENTIRE LENGTH OF THE FUEL OIL STORAGE TANK.
7. METAL HARDWARE (STRAP ENDS, WIRE ROPE, TURNBUCKLES, ETC.) SHALL NEVER COME IN DIRECT CONTACT WITH THE FUEL OIL STORAGE TANKS.
8. PRIOR TO ANCHORING AND BACKFILLING, THE FIRST DEFLECTION MEASUREMENTS SHALL BE TAKEN AFTER THE FUEL OIL STORAGE TANK HAS BEEN PLACED INTO THE EXCAVATION SITE. THE SECOND DEFLECTION MEASUREMENT SHALL BE TAKEN AFTER MECHANICAL ANCHORING IS COMPLETE.
9. ANCHOR STRAPS SHALL BE ALIGNED WITH THE DESIGNATED ANCHOR RIBS (+1"). DO NOT INSTALL THE ANCHOR STRAPS BETWEEN THE RIBS.
10. ALL ANCHOR STRAPS MUST BE UNIFORMLY TIGHTENED WITH TURNBUCKLES. STRAPS SHOULD BE SNUG BUT NOT CAUSE DEFLECTION OF THE TANKS.

TSOI KOBUS **DESIGN**
60 STATE STREET, SUITE 1800
Boston, MA 02109
Tel: 617-475-4000 Fax: 617-475-4445
www.tsoikobus.design

CAPE COD HEALTHCARE

CAPE COD HOSPITAL

27 Park Street
Hyannis, MA 02601

SITE ENABLING SUBMISSION

Structural	ODEH ENGINEERS 1223 Mineral Spring Ave., North Providence, RI 02904 Tel. (401) 724-1771	
Civil	DOWN CAPE ENGINEERING, INC 939 Main St., Yarmouthport, MA Tel (508) 362-4541	
HVAC Design	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200	
Electrical Engineer	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200	
Plumbing and Fire Protection	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200	
Lighting	I AM PARTNERS 64 Sherman St., Cambridge MA 02140 Tel. (617) 354-4502	
Landscape Architect	STIMSON 229 Hanover St., Cambridge MA 02139 Tel. (617) 876-6960	
Elevators	VDA 100 Summer Street, Suite 1600, Boston, MA 02110 Tel. (617)57 4-5099	

Stamp

Revisions

No.	Description	Date

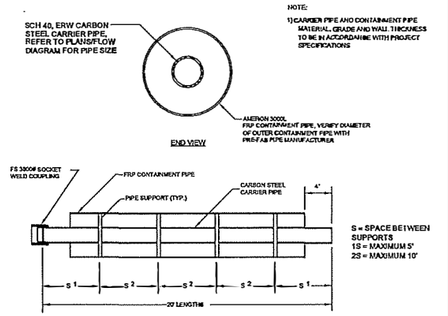
Key Plan

Drawing Title
MECHANICAL SITE ENABLING DETAILS

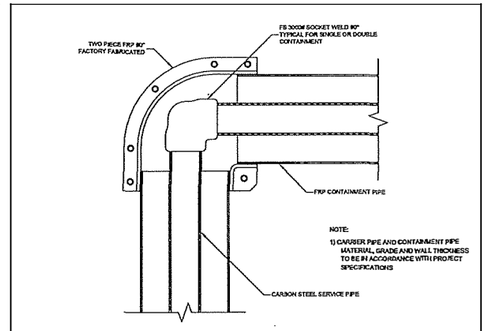
Job Number	2016101
Drawn by	Author
Checked	Checker
Date	05/17/19
Scale	NTS

Drawing No.
ME3.0

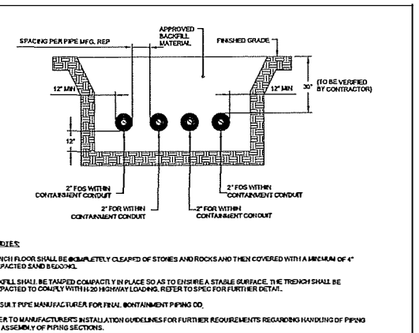
9/17/2019 4:29:25 PM BIM 360://Cape Cod Hospital New Tower
Addition/2016101-CCH_ESS_MEP_Central_Q_Model.rvt



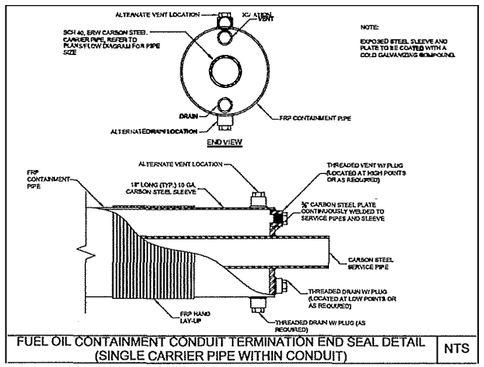
FUEL OIL CONTAINMENT CONDUIT STRAIGHT ASSEMBLY DETAIL | NTS



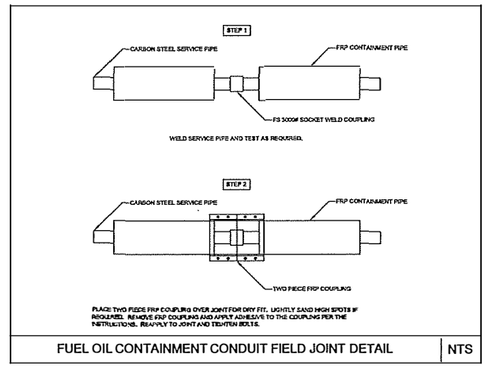
FUEL OIL CONTAINMENT CONDUIT 90° ELBOW ASSEMBLY DETAIL | NTS



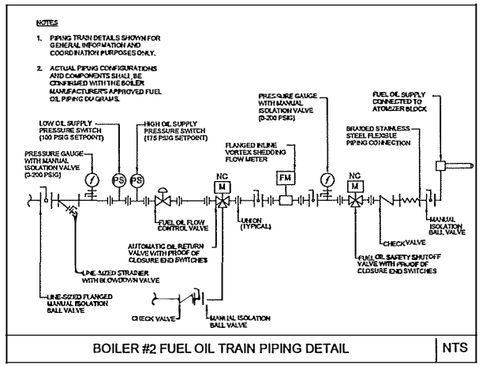
UNDERGROUND PIPING TRENCH DETAIL | NTS



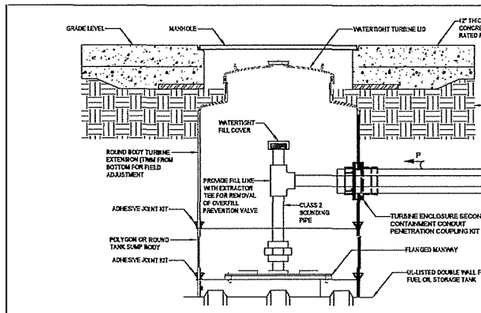
FUEL OIL CONTAINMENT CONDUIT TERMINATION END SEAL DETAIL (SINGLE CARRIER PIPE WITHIN CONDUIT) | NTS



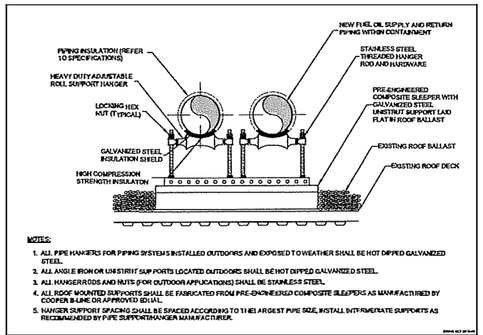
FUEL OIL CONTAINMENT CONDUIT FIELD JOINT DETAIL | NTS



BOILER #2 FUEL OIL TRAIN PIPING DETAIL | NTS



CONTAINMENT MANHOLE & PIPING / AUTOMATIC OVERFILL PREVENTION SYSTEM DETAIL | NTS



ROOF MOUNTED PIPE SUPPORT DETAIL | NTS

TSOI KOBUS **DESIGN**
60 STATE STREET, SUITE 1600
Boston, MA 02109
Tel: 617-475-4000 Fax: 617-475-4445
www.tsoikobus.design

CAPE COD HEALTHCARE

CAPE COD HOSPITAL

27 Park Street
Hyannis, MA 02601

SITE ENABLING SUBMISSION

Structural	ODEH ENGINEERS 1223 Mineral Spring Ave., North Providence, RI 02904 Tel. (401) 724-1171
Civil	DOWN CAPE ENGINEERING, INC. 939 Main St., Yarmouthport, MA Tel. (508) 362-4641
HVAC Design	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Electrical Engineer	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9200
Plumbing and Fire Protection	ENGINEERED SOLUTIONS, INC. 6 Union St, Natick MA 01760 Tel. (508) 647-9280
Lighting	IAM PARTNERS 84 Sherman St., Cambridge MA 02140 Tel. (617) 354-4502
Landscape Architect	STIMSON 228 Norfolk St., Cambridge MA 02139 Tel. (617) 876-6950
Elevators	VDA 190 Summer Street, Suite 1600, Boston, MA 02110 Tel. (617) 574-5099

Stamp

Revisions

No.	Description	Date

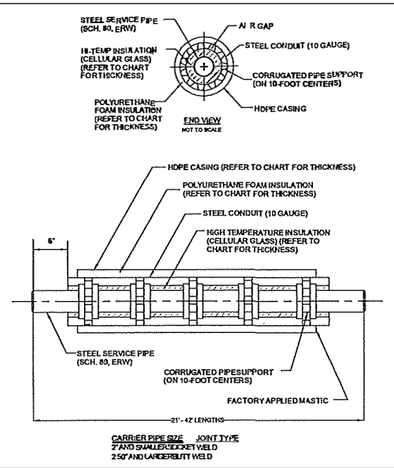
Key Plan

Drawing Title
MECHANICAL SITE ENABLING DETAILS

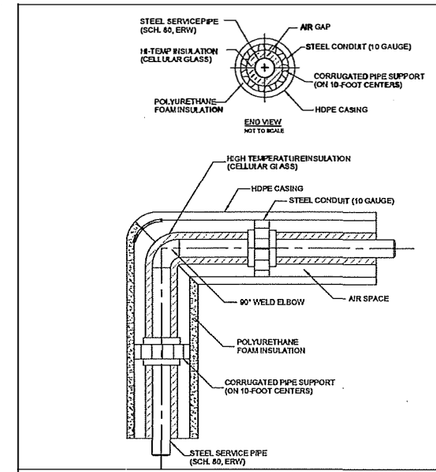
Job Number	2018104
Drawn by	Author
Checked	Checker
Date	05/17/19
Scale	NTS

Drawing No.
ME3.1

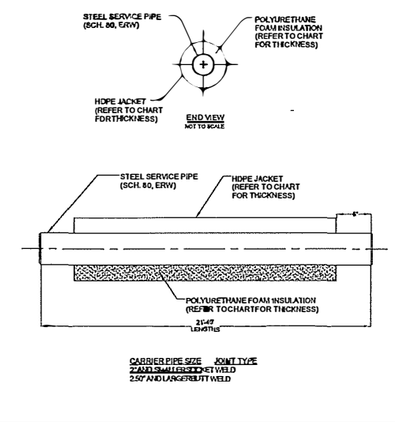
5/17/2019 6:25:14 PM S:\ML 2018\Cape Cod Hospital New Tower Addition\REVIT\ENGR_MEP_Central_Plant.rvt



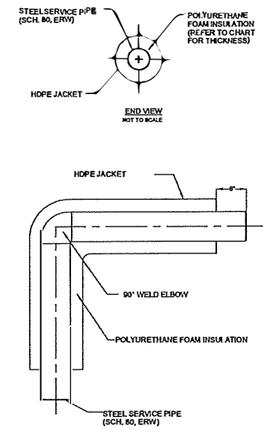
UNDERGROUND CONDUIT STRAIGHT LENGTH DETAIL (LPS/MPS) | NTS



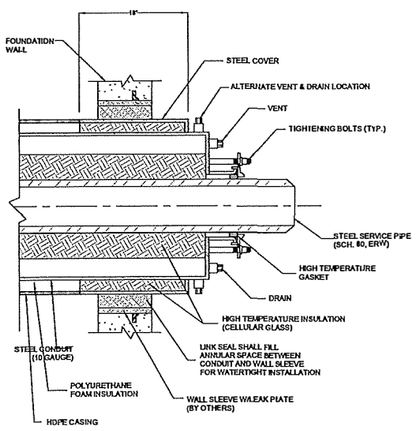
UNDERGROUND CONDUIT 90° ELBOW DETAIL (LPS/MPS) | NTS



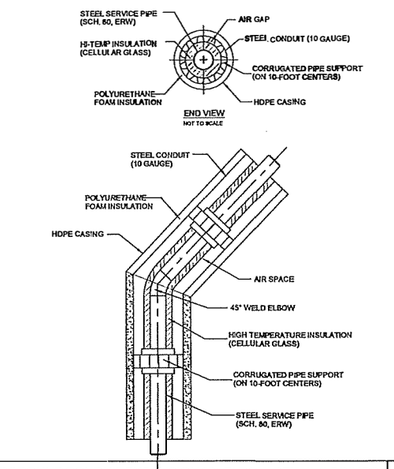
UNDERGROUND CONDUIT STRAIGHT LENGTH DETAIL (PC/HWS/HWR) | NTS



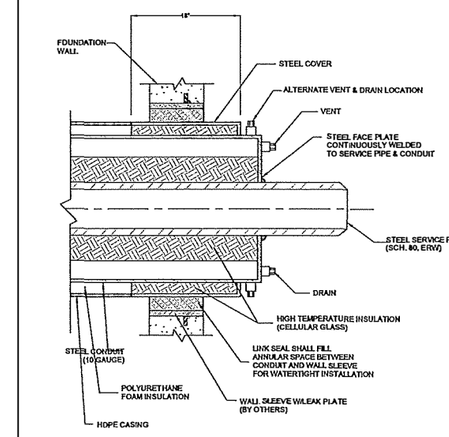
UNDERGROUND CONDUIT 90° ELBOW DETAIL (PC/HWS/HWR) | NTS



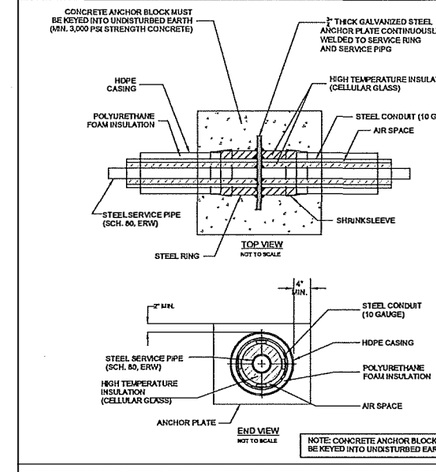
UNDERGROUND CONDUIT GLAND END SEAL DETAIL (LPS/MPS) | NTS



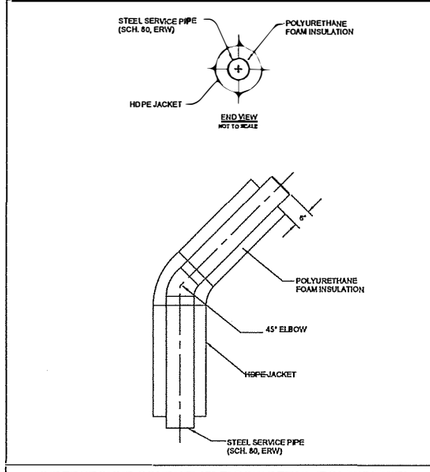
UNDERGROUND CONDUIT EXPANSION 90° ELBOW DETAIL (LPS/MPS) | NTS



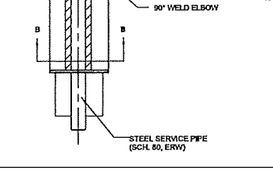
UNDERGROUND CONDUIT WELD END SEAL DETAIL (LPS/MPS) | NTS



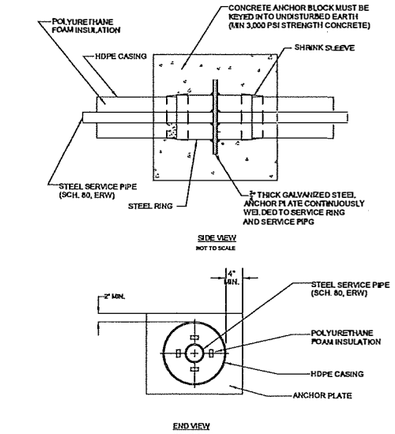
UNDERGROUND CONDUIT ANCHOR/THRUST BLOCK DETAIL (LPS/PC) | NTS



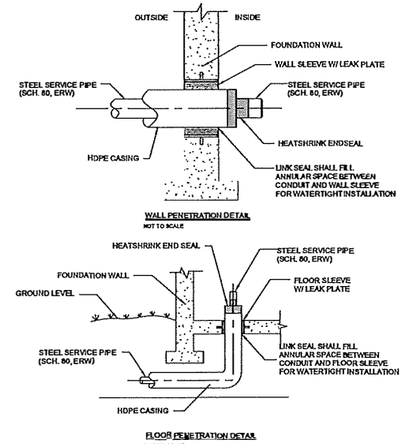
UNDERGROUND CONDUIT 45° ELBOW DETAIL (PC/HWS/HWR) | NTS



UNDERGROUND CONDUIT 90° EXPANSION ELBOW (PC/HWS/HWR) | NTS



UNDERGROUND CONDUIT ANCHOR DETAIL (PC/HWS/HWR) | NTS



CONDUIT FIELD JOINT, HEAT SHRINK SLEEVE DETAIL (PC/HWS/HWR) | NTS

TSOI KOBUS DESIGN
60 STATE STREET, SUITE 1600
Boston, MA 02109
Tel: 617-475-4000 Fax: 617-475-4445
www.tsoikobus.design

CAPE COD HEALTHCARE

CAPE COD HOSPITAL

27 Park Street
Hyannis, MA 02601

SITE ENABLING SUBMISSION

Structural	ODEH ENGINEERS	1223 Mineral Spring Ave., North Providence, RI 02904 Tel. (401) 724-1171
Civil	DOWN CAPE ENGINEERING, INC	939 Main St., Yarmouthport, MA Tel. (508) 362 4548
HVAC Design	ENGINEERED SOLUTIONS, INC.	6 Union St, Natick MA 01760 Tel. (508) 647-9200
Electrical Engineer	ENGINEERED SOLUTIONS, INC.	6 Union St, Natick MA 01760 Tel. (508) 647-9200
Plumbing and Fire Protection	ENGINEERED SOLUTIONS, INC.	6 Union St, Natick MA 01760 Tel. (508) 647-9200
Lighting	LAM PARTNERS	84 Sherman St, Cambridge MA 02140 Tel. (617) 354-0522
Landscape Architect	STINSON	228 Norfolk St., Cambridge MA 02139 Tel. (617) 876-6950
Elevators	VDA	100 Summer Street, Suite 1600, Boston, MA 02110 Tel. (617)574-5009

Stamp

Revisions

No.	Description	Date

Key Plan

Drawing Title
MECHANICAL SITE ENABLING DETAILS

Job Number	2016104
Drawn by	Author
Checked	Checker
Date	9/17/19
Scale	NTS

Drawing No.
ME3.2

9/17/2019 4:25:22 PM E:\M 365 Files\Cape Cod Hospital\New Terrain Addition\2016104_ESE_MEP_Cont-dj_Vis.rvt R19.rvt